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(54) **Unit for dispensing liquid food products**

(57) A unit for dispensing at least one liquid food product has a hydraulic circuit (8) connecting at least one outlet (5) to a tank (11) containing the product; and a pneumatic circuit (16) for feeding ambient air into the tank (11); a sterilizing device (22) being provided to sterilize the air drawn in by an air intake (19) of the pneumatic circuit (16).

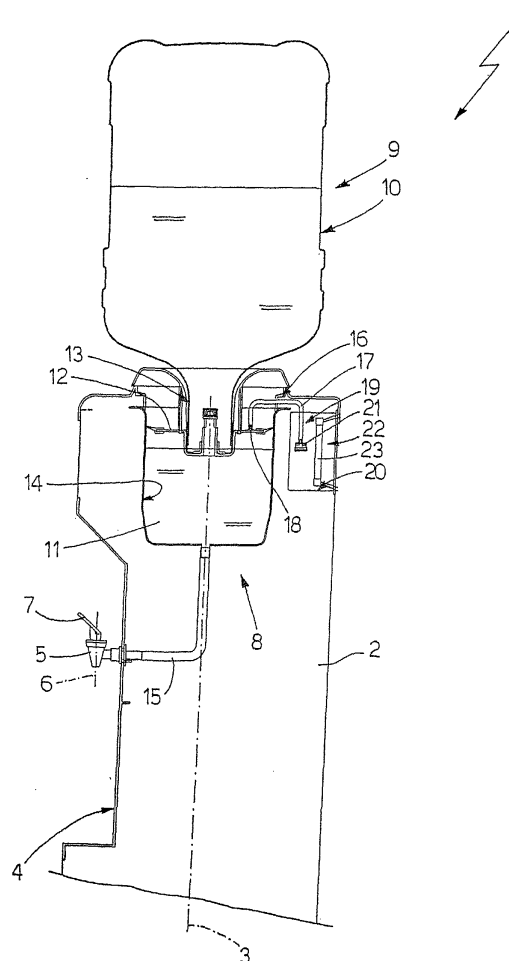


Fig.2

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Description

[0001] The present invention relates to a unit for dispensing liquid food products.

[0002] More specifically, the present invention relates to a unit for dispensing drinking water, to which the following description refers purely by way of example.

[0003] For dispensing drinking water, a dispensing unit is used comprising at least one outlet; a water tank; a hydraulic circuit connecting the outlet to the tank; and a pneumatic circuit for feeding ambient air into the tank to permit outflow of the water from the tank when the outlet is opened by the user.

[0004] A major drawback of known units of the above type lies in the pneumatic circuit comprising an air intake which, being located to communicate with the outside, is easily contaminated by microorganisms such as bacteria, mold, ferments and/or protozoa present in the air, and which may therefore contaminate the water dispensed.

[0005] It is an object of the present invention to provide a unit for dispensing liquid food products, designed to eliminate the aforementioned drawbacks.

[0006] According to the present invention, there is provided a unit for dispensing at least one liquid food product, the unit comprising at least one outlet; a tank containing said product; a hydraulic circuit connecting said outlet to said tank; and a pneumatic circuit for feeding ambient air into said tank; the pneumatic circuit having an air intake communicating with the outside; and the unit being characterized by also comprising sterilizing means for sterilizing a space enclosing said air intake and the air drawn in by the air intake itself.

[0007] A non-limiting embodiment of the present invention will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 shows a schematic view in perspective of a preferred embodiment of the unit for dispensing liquid food products according to the present invention;

Figure 2 shows a schematic side view of the Figure 1 unit.

[0008] Number 1 in Figures 1 and 2 indicates as a whole a unit for dispensing liquid food products - in the example shown, drinking water - and comprising a substantially tubular outer casing 2, which has a substantially vertical longitudinal axis 3, and is defined at the front by a front surface 4.

[0009] Unit 1 has at least one water outlet 5, which is fitted to surface 4 of casing 2, has a longitudinal axis 6 substantially parallel to axis 3, dispenses, in the example shown, cold water, and has a known control lever 7 for opening or closing outlet 5.

[0010] Outlet 5 is connected by a hydraulic circuit 8 to a drinking water source 9 defined, in the example shown, by a substantially cup-shaped vessel 10 fitted in

known manner to the top portion of casing 2 in an upside down position so that the water flows down into circuit 8. In a variation not shown, vessel 10 may be eliminated, and circuit 8 may be connected directly to the water mains which thus defines source 9.

[0011] Circuit 8 comprises a tank 11 which communicates hydraulically with vessel 10, has a substantially annular sealing member 12 extending inside tank 11 and about a neck 13 of vessel 10 to define a bottom chamber 14 containing water, and has a known cooling device (not shown) for cooling the water in chamber 14. Circuit 8 also comprises a conduit 15 hydraulically connecting tank 11 to outlet 5.

[0012] Unit 1 also comprises a known pneumatic circuit 16 for feeding ambient air into chamber 14 and over the free surface of tank 11 to permit water supply to conduit 15, and therefore to outlet 5, when the user operates lever 7 to open outlet 5. Circuit 16 comprises a conduit 17 extending through tank 11 and communicating pneumatically with chamber 14 via a safety valve 18, and with the outside via an air intake 19, which is housed in a cavity 20 formed in casing 2, and has a known filter 21.

[0013] Unit 1 also comprises a sterilizing device 22 in turn comprising an ultraviolet lamp 23, which is housed inside cavity 20, extends substantially parallel to axis 3, and irradiates intake 19 to sterilize the air drawn in by intake 19. More specifically, lamp 23 emits ultraviolet radiation of a wavelength substantially below 320 nanometers, and preferably ranging between 240 and 320 nanometers, to destroy microorganisms such as bacteria, mold, ferments and/or protozoa on intake 19 and in the air surrounding intake 19.

[0014] In a variation not shown, intake 19 opens outwards at surface 4 and close to outlet 5, so that one lamp 23 is able to sterilize outlet 5, intake 19, and a space enclosing outlet 5 and intake 19.

[0015] Operation of unit 1 is easily deducible from the foregoing description, with no further explanation required.

Claims

1. A unit for dispensing at least one liquid food product, the unit comprising at least one outlet (5); a tank (11) containing said product; a hydraulic circuit (8) connecting said outlet (5) to said tank (11); and a pneumatic circuit (16) for feeding ambient air into said tank (11); the pneumatic circuit (16) having an air intake (19) communicating with the outside; and the unit being **characterized by** also comprising sterilizing means (22) for sterilizing a space enclosing said air intake (19) and the air drawn in by the air intake (19) itself.
2. A unit as claimed in Claim 1, wherein said sterilizing means (22) comprise at least one ultraviolet lamp (23) so located as to irradiate said air intake (19).

3. A unit as claimed in Claim 2, wherein the rays of said ultraviolet lamp have a wavelength substantially below 320 nanometers.
4. A unit as claimed in Claim 2 or 3, wherein the air intake (19) and the outlet (5) are so located that said ultraviolet lamp (23) irradiates both the outlet (5) and the air intake (19). 5
5. A unit as claimed in any one of the foregoing Claims, wherein said product is drinking water. 10

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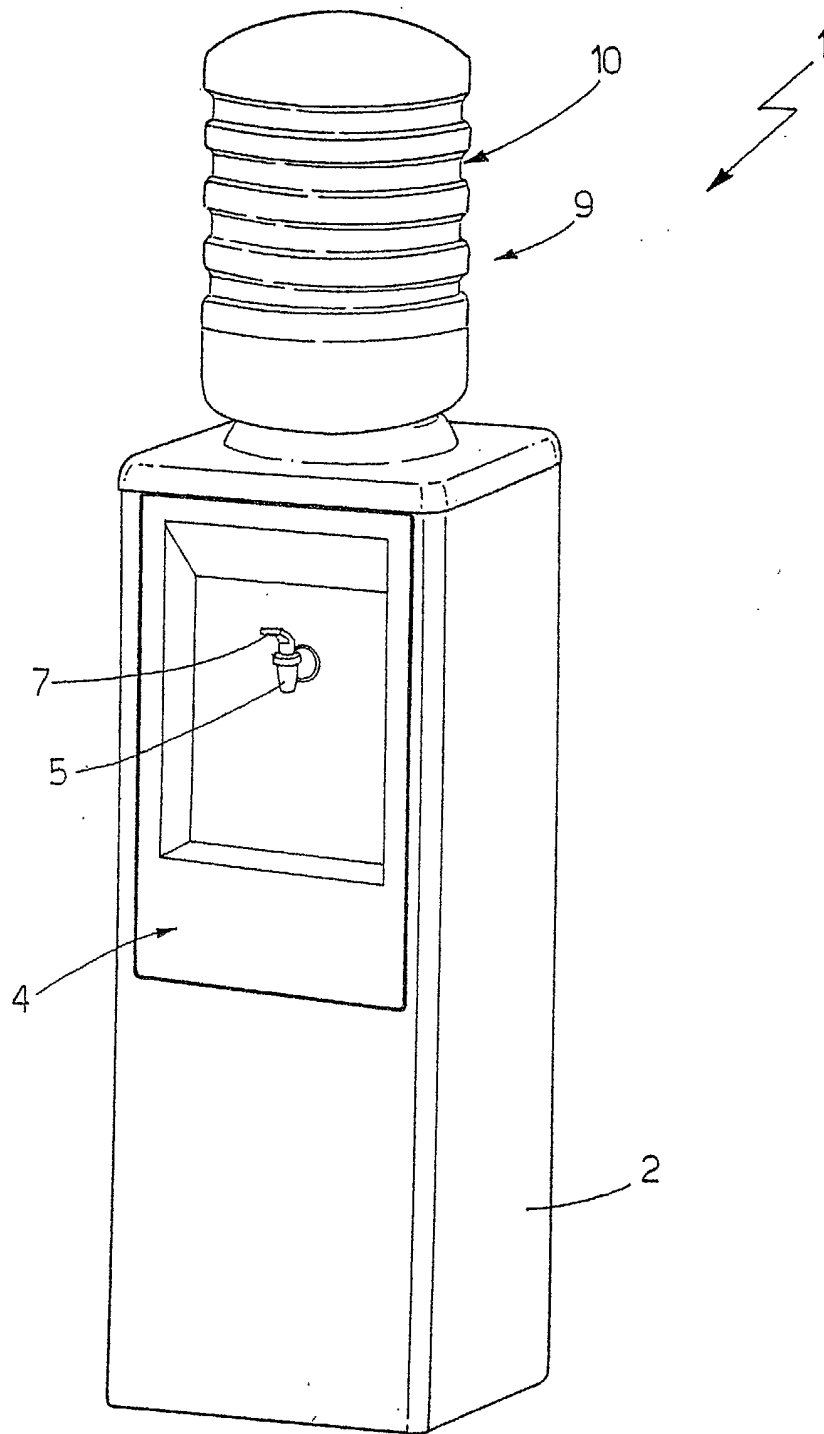


Fig.1

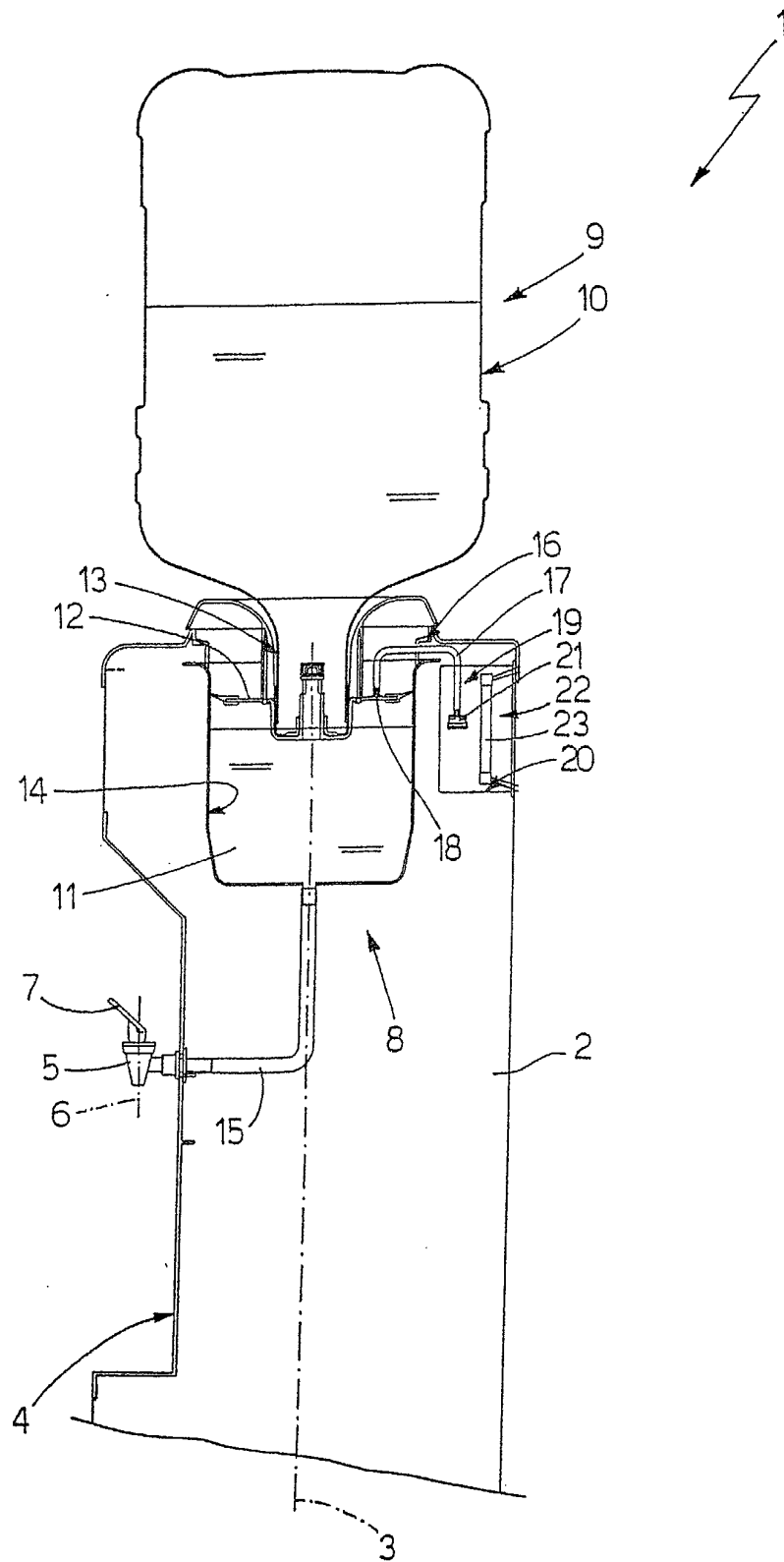


Fig.2



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EUROPEAN SEARCH REPORT

Application Number
EP 02 01 4339

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 4 801 375 A (PADILLA JAMES M) 31 January 1989 (1989-01-31) * column 14, line 17 - line 37; figure 1 *	1,2,5	B67D1/00 B67D3/00
Y	* column 2, line 25 - line 31 *	3,4	
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A	* page 12, line 18 - line 47 * * page 13, line 19 - line 22; claim 1; figures 29-31 *	1,2,4,5	
Y	US 5 316 673 A (KOHLMANN MICHAEL J ET AL) 31 May 1994 (1994-05-31) * abstract *	4	
A	US 3 550 782 A (VELOZ LOUIS P) 29 December 1970 (1970-12-29) * column 2, line 10 - line 14 * * column 3, line 3 - line 39; figure 1 *	1-3,5	
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The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 10 September 2002	Examiner Desittere, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03 82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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10-09-2002

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